LETTER REPORT
FOR
SANDOVAL ZINC
SANDOVAL, MARION COUNTY, ILLINOIS
TDD: T05-9111-010
PAN: EIL0760DAA

MARCH 13, 1992

Prepared by: Michelle L. Foster Date: 3/13/92

Reviewed by: Kristi A. Eberly for L.W. Date: 3/13/92

Approved by: Richard L. Boelter Date: 3/13/92

ecology and environment, inc.

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International Specialists in the Environment

March 13, 1992

Mr. Duane Heaton
U. S. Environmental Protection Agency
Emergency Response Section
77 W. Jackson Blvd.
5th Floor
Chicago, Illinois 60604

RE: Sandoval Zinc site
Sandoval, Marion County, Illinois
TDD # T05-9110-025
PAN # EIL0760DAA

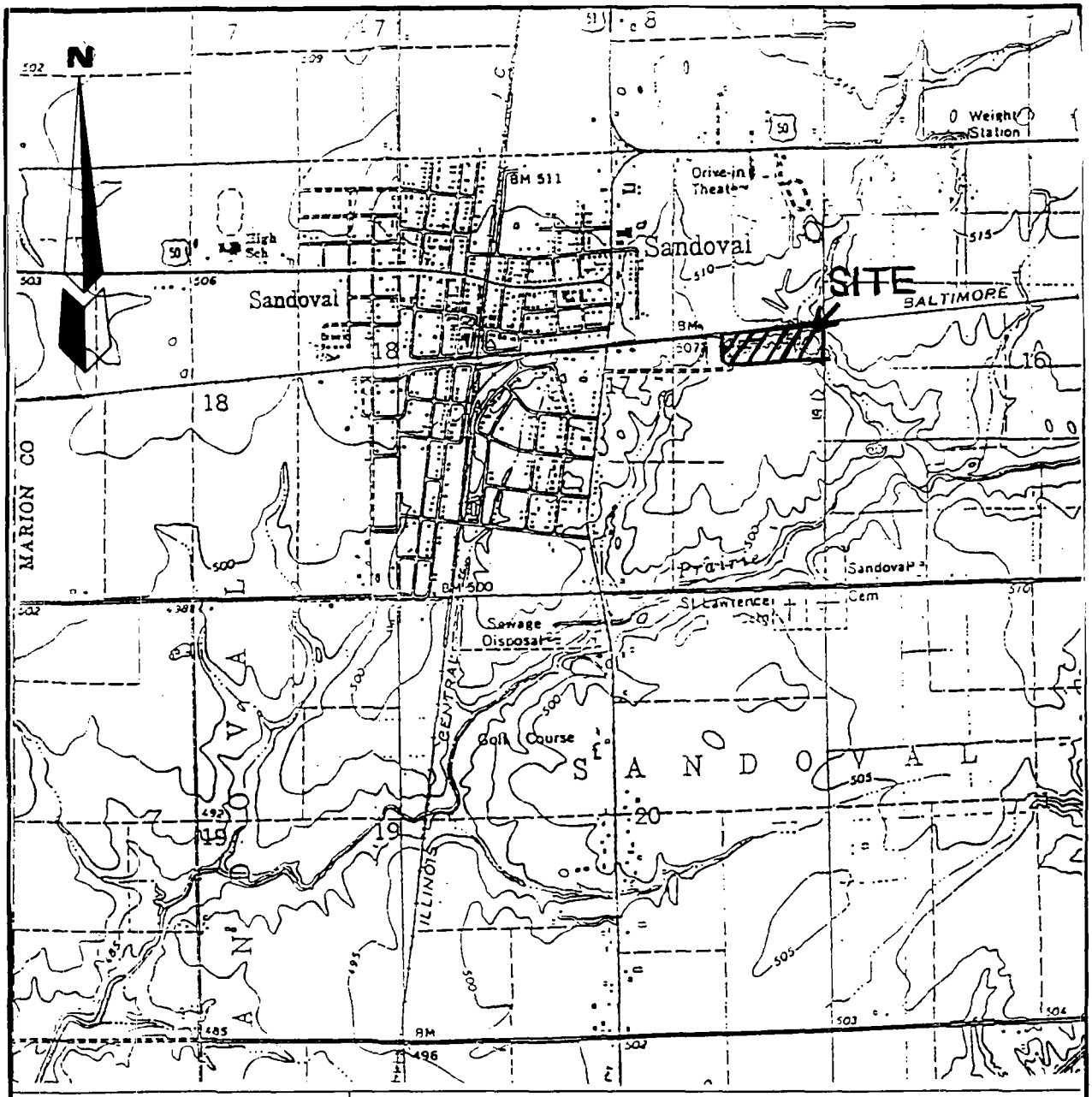
Dear Mr. Heaton:

On October 18, 1991, the Ecology and Environment, Inc. (E & E) Technical Assistance Team (TAT) was tasked by the United States Environmental Protection Agency (U.S. EPA) under TDD # T05-9111-010 to oversee contractor clean-up activities at the Sandoval Zinc site, Sandoval, Marion County, Illinois (see Figure 1 for site location). Oversight activities at this emergency response included Health and Safety Plan preparation, air monitoring, sampling, and photodocumentation (see Appendix A).

BACKGROUND

The Sandoval Zinc (SZ) site is an abandoned zinc smelting facility located on a 12 acre parcel of land in the southeast corner of the city of Sandoval. The SZ site is located in a mixed rural and commercial area characterized by open fields and marshy wetlands. A section of the Baltimore and Oriole railroad tracks borders the site to the north (see Figure 2 for site features). The other three sides of the site are bordered by open fields and farmlands. The site is completely fenced, and the nearest residences are located less than one mile away. A site access road approaches the site from the west. A drainage ditch begins at the west edge of the site and parallels the south side of the access road for approximately 100 yards. At this point, the ditch curves south and heads through a marshy area to Prairie Creek, approximately 1/2 mile south.

The SZ site is comprised of two large abandoned buildings, an abandoned railroad tank car (used as an aboveground storage tank), and old furnace building ruins. The Sandoval Zinc smelter facility began operating sometime in the late 1880s. Principal waste



QUADRANGLE LOCATION

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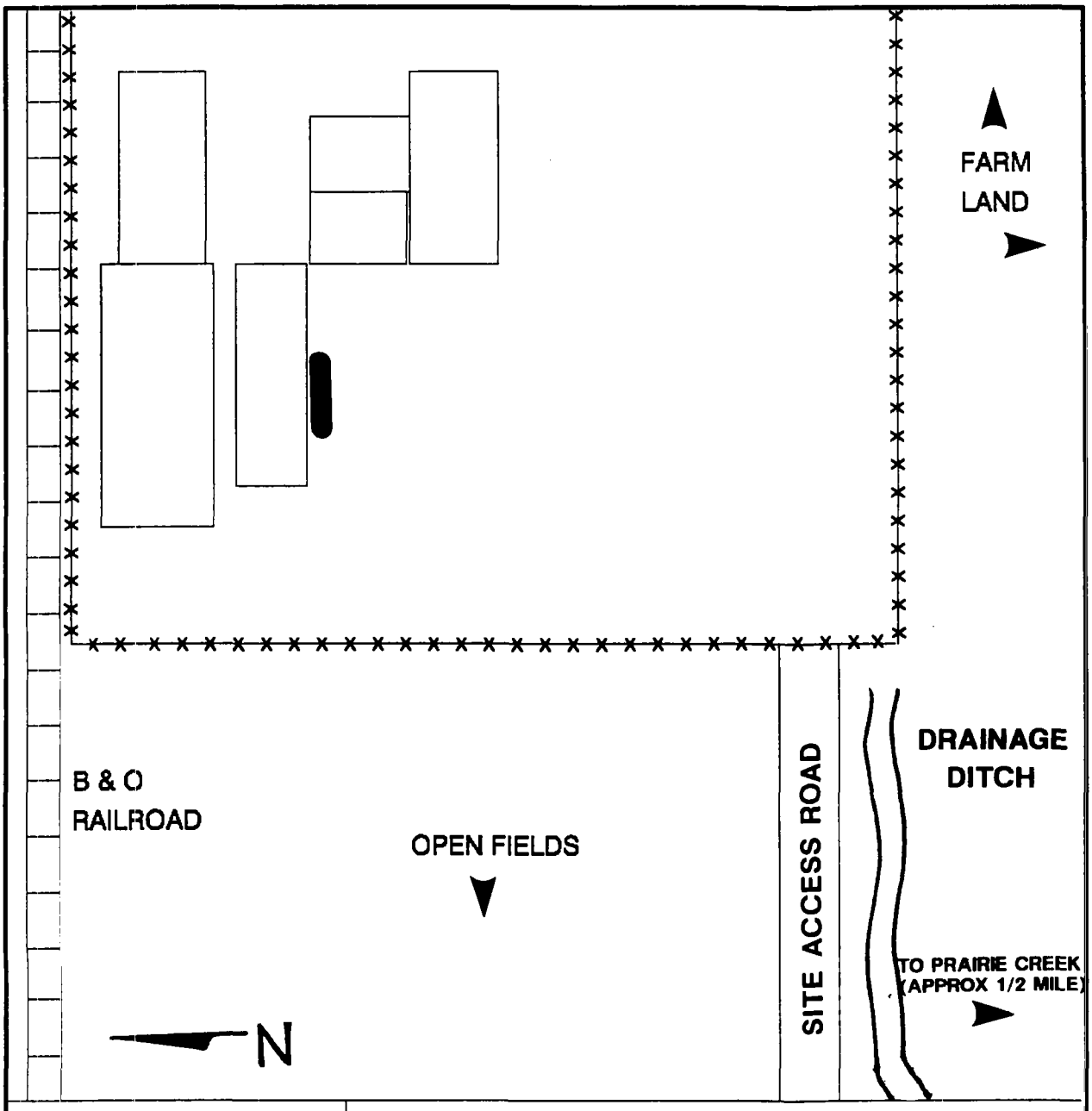
TITLE: SITE LOCATION	FIGURE #: 1
SITE: SANDOVAL ZINC	SCALE: 1:24000
CITY: SANDOVAL STATE: IL	PAN: EIL0760DAA
SOURCE: U.S.G.S. TOPOGRAPHIC MAP	DATE: MARCH 92
	REVISED:



LEGEND

= OIL STORAGE TANK

= SITE BOUNDARY

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TITLE: SITE FEATURES	FIGURE #: 2
SITE: SANDOVAL ZINC	SCALE: NOT TO SCALE
CITY: SANDOVAL STATE: IL	PAN: EIL0760DAA
SOURCE: ON-SITE OBSERVATIONS	DATE: MARCH 92
	REVISED:

emissions from the plant were cinders, believed to be metal-laden, and windblown ash. Large quantities of the cinders were used as fill material, and a layer of fill one to ten feet in thickness now covers the SZ site. In compliance with air pollution control regulations, a scrubber was installed on the plant stack in 1970. Operations at the plant ceased in 1985, and on December 19, 1986, the Sandoval Zinc Company was completely dissolved and the owners declared bankruptcy.

A large quantity of artificial fill from the smelting processes apparently was used to level the site's natural topography. Little or no vegetation grows on this grey cinder material. The site is slightly elevated as a result of this fill, and surface water runoff appears to flow in all directions away from the on-site buildings. Fill materials appear to be carried via this runoff past the southern property line and into the adjacent farmfield. Large areas of sparse vegetation are evident on the property south of the site. Building refuse and scrap are littered across the site.

From 1975 to 1982, the Illinois State Water Survey (ISWS) and the Illinois State Geological Survey (ISGS) carried out geologic and groundwater studies at the SZ site. Forty-nine monitoring wells were installed on-site at thirty-six different locations. According to the resulting ISWS/ISGS report, the processing waste covering the site is generally rich in zinc, lead, copper, cadmium, and aluminum. One sample of waste material at the site was 76 times the EP toxicity standard for lead. The analysis of groundwater samples collected during the study indicated that zinc contaminants had migrated through the soils and into area groundwater.

The Illinois Environmental Protection Agency (IEPA) and the Bureau of Mines conducted several sampling activities at the SZ site during 1986 and 1987. Analytical results of on-site soil samples indicated the presence of cadmium, lead, and zinc at concentrations ranging from 0.4% to 40.3%. High levels of these metals, and others, were also detected in surface water and sediment samples collected from drainage ditches downstream of the site. The contaminated water and sediments in these ditches could eventually reach Prairie Creek, 1/2 mile south of the site. The extent of contaminated water and sediment migration is not fully known since the sampling was relatively recent and noncomprehensive in scope.

The SZ site is currently being scored by the IEPA for inclusion on the National Priorities List (NPL). IEPA has contracted Ebasco Services Incorporated (Ebasco) to perform a Feasibility Study (FS) on the site. A draft FS Report prepared by Ebasco has been submitted to the IEPA.

On Sunday, November 10, 1991, the Sandoval Police Department contacted the IEPA to report a diesel spill at the site. A pipe at the base of the 11,000 gallon aboveground storage tank (abandoned

railroad car) had either frozen and ruptured or been vandalized. An undetermined quantity of #5 diesel fuel oil had been released to the site, and had migrated into the drainage ditch that runs along the south side of the site access road. IEPA personnel from the Collinsville Division had responded to the emergency and constructed a berm across the drainage ditch in the area where it turned south. This berm, along with absorbent boom placed at the edge of the spill, prevented the oil from reaching Prairie Creek. IEPA then requested U.S. EPA assistance and Oil Pollution Act (OPA) funding for the emergency response clean-up.

SITE ACTIVITIES

Monday, November 11, 1991

U.S. EPA On-Scene Coordinator (OSC) Walter Nied requested TAT assistance at 1500 hours. TAT Member (TATM) Michelle Jaster was tasked to respond to the emergency. Since a site meeting had been scheduled for 1000 hours the following morning, TATM Jaster and OSC Nied mobed at 2000 hours and travelled partway to Sandoval that evening. The OSC and TAT stopped for the evening in Rantoul, Illinois at 2230 hours.

Tuesday, November 12, 1991

OSC Nied and TATM Jaster mobed for the site at 0730 hours. The United States Coast Guard (USCG) had contracted Riedel Environmental Services (Riedel) out of Chesterfield, Missouri. Riedel was scheduled to arrive on-site at approximately 1000 hours with a vacuum truck.

The OSC and TAT arrived on-site at 1000 hours. John Stover, Marion County Emergency Services and Disaster Agency, and Abe Lincoln, Sandoval Chief of Police, were already on-site. Lincoln had discovered the spill during routine surveillance on November 10, 1991, and had contacted Stover, who in turn contacted the IEPA. After ensuring that the tank was completely empty and no longer leaking, OSC Nied asked TAT to monitor the area of the spill to ensure that the oil was pure product and not dilluted with solvents or other organics. TATM Jaster conducted the air monitoring with a photoionization detector (hNU), and no significant readings above background were obtained. The OSC determined that no respiratory protection would be necessary for the oil clean-up. Various members of local press organizations had arrived on-site, and all questions were handled by OSC Nied.

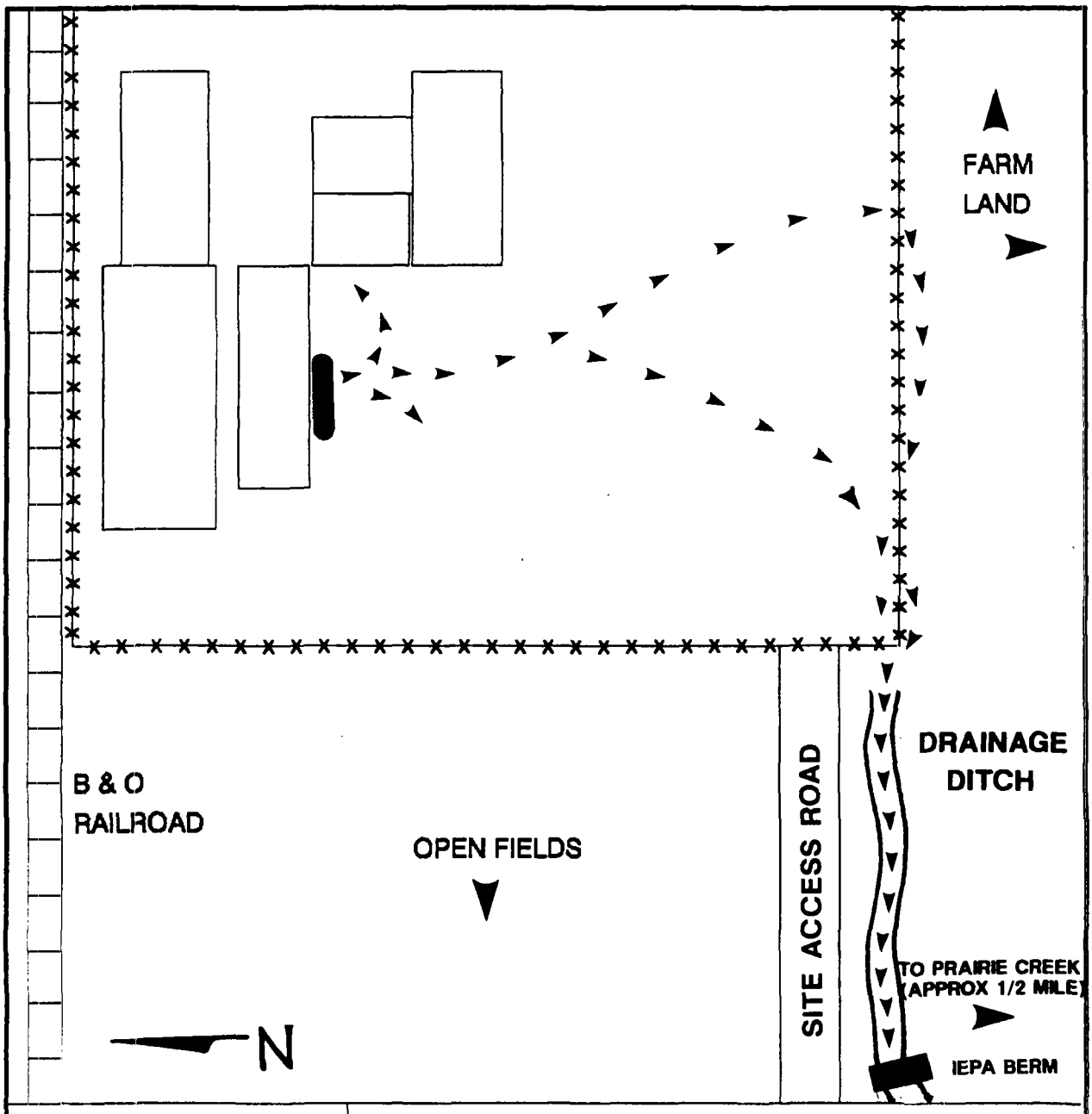
Mike Grant and Mark Johnson, IEPA Collinsville Division, arrived on-site at 1015 hours. Grant and Johnson had responded to the spill on Sunday and had constructed the temporary berm. Heavy rains Monday night had pushed the spill approximately 100 feet beyond the berm, but an absorbent boom they had placed downstream

had minimized further migration. Figure 3 depicts the migration pathway of the spill. IEPA believed that the product in the tank was probably pure, but the spilled oil may have possibly acquired some of the heavy metal contaminants as it ran across the site. The OSC and TAT agreed to sample the oil and have it analyzed for heavy metal concentration. IEPA also confirmed, via their Superfund office, that no viable Potentially Responsible Party (PRP) existed for the SZ site.

Riedel arrived on-site at 1030 hours with a subcontracted 3,600 gallon vacuum truck from Odesco Industrial Services (Odesco), South Roxana, Illinois. Dan Wilson, Riedel's Response Manager, made arrangements for a second vacuum truck and a power washer (for decontamination purposes), as well as for analytical services at an IEPA-recommended laboratory in the area. TAT collected a 1-liter sample from a large pool of oil in the loading dock area on-site at 1415 (see Figure 4 for sample location). The sample was delivered by the IEPA representatives to ARDL in Mt. Vernon, Illinois. If possible, the sample would be analyzed for total metals; however, if the sample could not be sufficiently filtered, TCLP analysis would be necessary. ARDL guaranteed a 72-hour turnaround time.

At 1430 hours, Philip Richardson from Central States Environmental Services (CSES) arrived on-site and offered to assist. CSES, the IEPA's emergency response contractor, was headquartered 10 miles away in Centralia, Illinois. CSES would be able to provide two 5,000-gallon vacuum tankers and a light plant. In addition, since the temperatures were expected to fall below freezing, CSES could store their tankers inside their heated warehouse overnight. Wilson, TAT, and the OSC agreed that CSES's assistance would expedite the clean-up, and Wilson began making the necessary arrangements with Richardson.

All four vacuum trucks were on-site and operational by 1700 hours. The trucks had been spread out along the length of the spill, with CSES focusing on the area inside the facility and Odesco and Riedel focusing on the drainage ditch parallel to the site access road. Wilson had subcontracted a water truck from McKay's Haz-Mat Truck Service (McKay's) in Centralia. The water was used to facilitate the flushing of the oil out of the drainage ditch vegetation and into the vacuum trucks. The end of the migration pathway had been rebermed, and additional absorbents were in place. OSC Nied told Riedel to berm the north side of a culvert that connected a drainage ditch on the north side of the road to the affected one. A small quantity of oil that had already migrated into the northern ditch was soaked up with absorbent pads. TAT also continued to monitor and record the various contractor's on-site personnel and equipment. Work was completed for the day at 2130 hours.



LEGEND

= OIL STORAGE TANK

= SITE BOUNDARY

= SPILL PATHWAY

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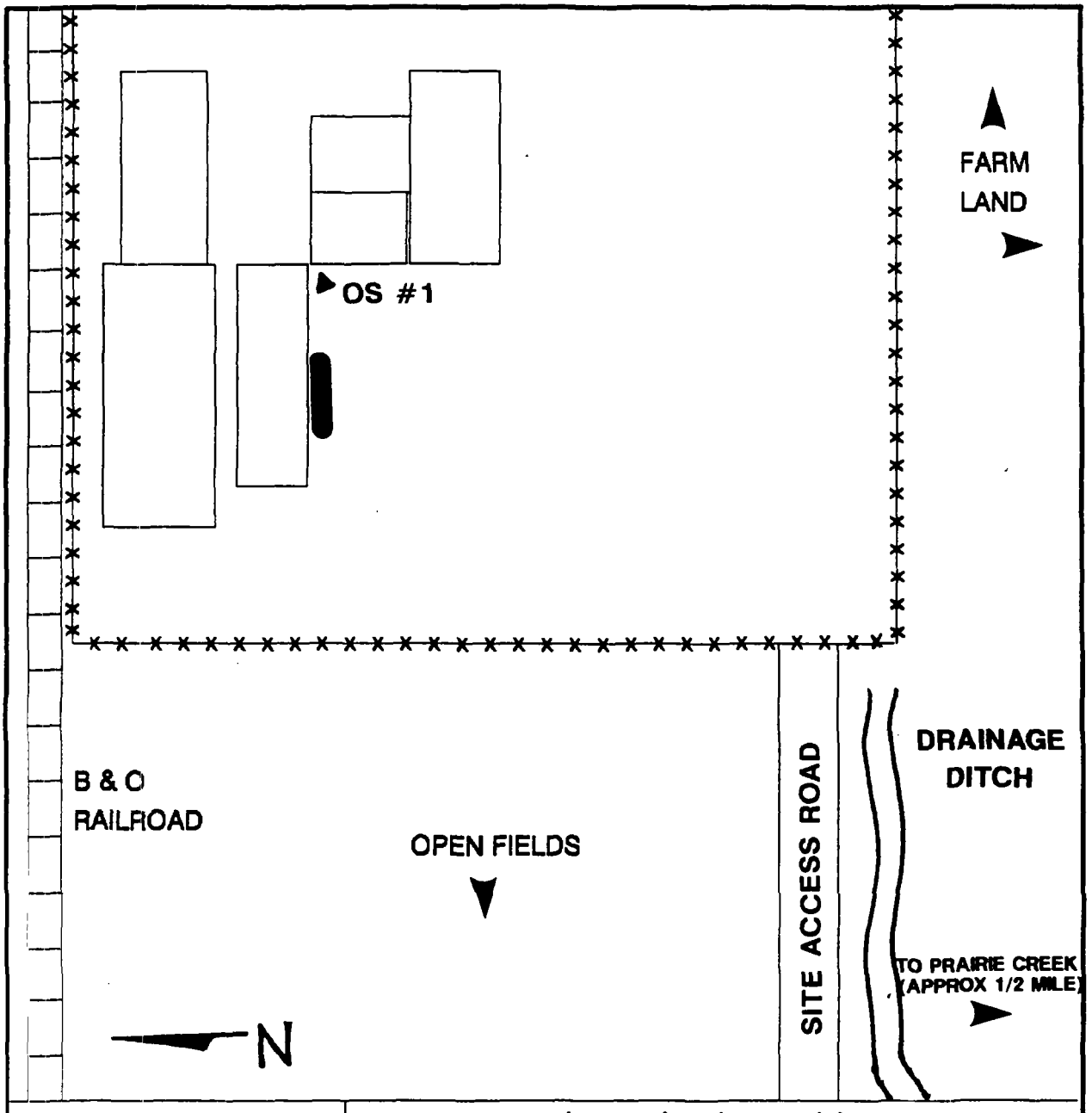
TITLE: OIL SPILL PATHWAY	FIGURE #: 3
SITE: SANDOVAL ZINC	SCALE: NOT TO SCALE
CITY: SANDOVAL STATE: IL	PAN: EIL0760DAA
SOURCE: ON-SITE OBSERVATIONS	DATE: MARCH 92
	REVISED:



LEGEND

= OIL STORAGE TANK

= SITE BOUNDARY

= OIL SAMPLE #1

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TITLE: SAMPLE LOCATION	FIGURE #: 4
SITE: SANDOVAL ZINC	SCALE: NOT TO SCALE
CITY: SANDOVAL STATE: IL	PAN: EIL0760DAA
SOURCE: ON-SITE OBSERVATIONS	DATE: MARCH 92
	REVISED:

Wednesday, November 13, 1991

Site activities began at 0700 hours. All four vacuum trucks continued to work at different areas along the spill route. A load of gravel was delivered to the site at 0830 hours. The gravel was needed to stabilize on-site roads before driving the 5,000-gallon tankers to the back portions of the site. At 0915 hours, Steve Gobelman, IEPA, arrived on-site. Gobelman, the Project Manager for the SZ site, reiterated that no viable PRP existed. Gobelman also gave the OSC permission to store any oil-saturated soil excavated during the clean-up in one of the abandonded on-site buildings. The OSC agreed to relocate any existing waste piles to one end of the building before moving any soil inside. Gobelman and the OSC agreed that any work in the buildings must be performed in Level C due to the heavy metals present on-site. OSC also agreed to replace the lock on the facility gate, and TAT would forward the key to Gobelman in Springfield.

Site activities concluded at 1930 hours. Approximately 7,500 gallons of oil had been retrieved. As much water as possible was decanted off of the two small Odesco vacuum trucks, and the remaining product off-loaded into the two CSES tankers. One of the CSES tankers was full, and was stored in the CSES warehouse pending final disposal arrangements.

Thursday, November 14, 1991

Site activities began at 0700 hours. The two 3,600-gallon Odesco vacuum trucks were deconned and demobed at 0845 hours. The remaining 5,000-gallon tanker focused on the standing oil left at the end of the migration pathway in the drainage ditch. Vacuum operations were completed at 1645 hours, and the second tanker was also stored in the CSES warehouse pending final disposal arrangements. Analytical results were received from ARDL and all metals, including lead and zinc (detected at 0.56 and 0.62 ppm respectively), were below the TCLP limits.

A representative from Gateway Petroleum arrived on-site at 1000 hours and collected a sample directly from one of the CSES tankers for disposal analysis. At 1400 hours, Gateway contacted Wilson with the analytical results. The liquid in the tankers was biphasal. The bottom phase was a liquid containing 8% water, and the top phase was a sludge containing 40% water. As a result of the cold temperatures, an emulsion formed between the oil and the water. The water was trapped in this emulsion, and could not be decanted. Because of this high water content, none of the three disposal options previously arranged could accept the oil. Wilson would continue to explore new disposal options including heat treatment or refinery possiblities.

The majority of the day's on-site activities focused on the excavation of the oil-saturated soils. One hundred cubic yards of kiln dust had been delivered to site on 11/13/91. The kiln dust

was spread over the oil-saturated soils and mixed with the oil. A total of 180 cubic yards of the kiln dust/oil/soil mixture was excavated from the drainage ditch with a trackhoe and stored in the on-site building. The soil piles were enclosed in a visqueen base and cover. The kiln dust/oil/soil mixture from on-site areas was scraped into piles and would be moved into the building in the morning. On-site activities concluded at 1830 hours.

Friday, November 15, 1991

Site activites began at 0700 hours. Two areas off-site still contained standing oil as a result of percolation out of the ground after the conclusion of vacuuming activities. One area was in the field adjacent to the south side of the site, and the other area was at the western edge of the drainage ditch. Both of these areas were marshy wetlands with soil conditions that were not conducive to excavation with heavy machinery. OSC Nied decided to spread the kiln dust over the affected field south of the site. The kiln dust would be left on top of the oil, thus preventing any additional migration. Absorbent booms placed at the western edge of the drainage ditch would serve the same function.

The scraped soil mixture scraped was placed inside the on-site building. Forty cubic yards of this material was enclosed in visqueen and stored in an area adjacent to the soil mixture from the drainage ditch. The two excavation streams were not combined in the event that the on-site scrapings were contaminated with heavy metals. Absorbent boom was placed around all of the stored soil as an additional precaution against oil migration; however, no migration should occur as the kiln dust/oil mixtures were extremely dry. The remaining kiln dust was spread over the site to prevent oil migration should further percolation occur.

Wilson continued to explore disposal options. He was unable to locate a refinery that would accept the oil, and heat treatment options appeared to be extremely costly. He agreed to contact both OSC Nied and TATM Jaster as soon as disposal arrangements were finalized. Riedel would bag all saturated absorbent booms and pads, as well as used Personal Protective Equipment (PPE), in plastic drum liners and store them in the on-site building prior to demobing from site. The OSC and TAT demobed from the site at 1045 hours. Riedel demobed from the site at 1730 hours.

FURTHER ACTIONS

On Monday, November 18, 1991, Wilson contacted OSC Nied and TAT Jaster with the final disposal arrangements. Safety-Kleen in St. Louis could accept the oil despite the water/oil emulsion. Safety-Kleen was currently reviewing the analytical data fom ARDL. The OSC and TAT developed an initial pollution report (polrep) for distribution to the appropriate parties. A copy of the polrep, along with the site gate key, was forwarded to Gobelman at the IEPA.

On Wednesday, November 20, 1991, Safety-Kleen picked up 8,600-gallons of liquid from the CSES tankers and transported it to their St. Louis facility for incineration. TAT mailed a copy of the site gate key to CSES so they could place their drummed tanker rinsates inside the on-site storage building, as previously arranged per the OSC. Nine 55-gallon drums filled with oil/sludge/water mixtures, and one additional drum full of used PPE were placed inside the facility. The gate key was subsequently returned to TAT.

On Monday, November 25, 1991, Gobelman (IEPA) contacted TAT Jaster. A local engineer had filed a complaint with the IEPA stating that the marshy area at the end of the migration pathway in the drainage ditch was still saturated with oil. Personnel from the Collinsville Division had visited the site to assess the problem, and noted that absorbent booms left on-site to prevent further migration were saturated. OSC Nied was notified, and he promptly made arrangements for the IEPA to periodically inspect the site and replace any saturated materials.

FINAL ACTIONS

On Monday, January 20, 1992, OSC Nied and TAT received copies of the Riedel invoice for review. The invoice was subsequently returned to Riedel for minor corrections. Following these changes, OSC Nied forwarded the approved Riedel invoice to the USCG on Friday, February 7, 1992. The Riedel invoice, which totalled $62,161.22, was rerouted with the appropriate OSC certification on Friday, February 21, 1992.

During the week of March 9 - 13, 1992, TAT completed the remaining financial paperwork. OSC Nied forwarded the paperwork, along with a copy of this letter report and an Investigative Statement, to the USCG. In addition, a final polrep was prepared and forwarded to the appropriate parties.

If you have any questions, please do not hesitate to contact this office.

Sincerely,

Michelle L. Jaster

cc: Walter Nied, OSC
Thomas Kouris, TATL
USCG, 2nd District Office
Steve Gobelman, IEPA

APPENDIX A: Site Photographs

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: Sandoval Zinc

U.S. EPA ID: N/A TDD: T05-9111-010 PAN: EIL0760DAA

DATE: 11/12/91

TIME: 1030

DIRECTION OF PHOTOGRAPH: North

WEATHER CONDITIONS: Mostly Cloudy Upper 40's

PHOTOGRAPHED BY: M. Jaster

SAMPLE ID (if applicable): NA

DESCRIPTION: View of on-site storage tank -- source of spill.

DATE: 11/13/91

TIME: 0945

DIRECTION OF PHOTOGRAPH: North

WEATHER CONDITIONS: Mostly Sunny Upper 50's

PHOTOGRAPHED BY: M. Jaster

SAMPLE ID (if applicable): NA

DESCRIPTION: View of ruptured pipe valve that resulted in spill.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: Sandoval Zinc PAGE 2 OF 10

U.S. EPA ID: N/A TDD: T05-9111-010 PAN: EIL0760DAA

DATE: 11/12/91

TIME: 1030

DIRECTION OF PHOTOGRAPH: North

WEATHER CONDITIONS: Mostly Cloudy Upper 40's

PHOTOGRAPHED BY: M. Jaster

SAMPLE ID (if applicable): Oil 1

DESCRIPTION: View of pooled oil east of source. Oil sample #1 was collected from loading dock area in background.

DATE: 11/12/91

TIME: 1035

DIRECTION OF PHOTOGRAPH: East

WEATHER CONDITIONS: Mostly Cloudy Upper 40's

PHOTOGRAPHED BY: M. Jaster

SAMPLE ID (if applicable): NA

DESCRIPTION: View of pooled oil to east of tank.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: Sandoval Zinc PAGE 3 OF 10

U.S. EPA ID: N/A TDD: T05-9111-010 PAN: EIL0760DAA

DATE: 11/12/91

TIME: 1030

DIRECTION OF PHOTOGRAPH: North

WEATHER CONDITIONS: Mostly Cloudy Upper 40's

PHOTOGRAPHED BY: M. Jaster

SAMPLE ID (if applicable): NA

DESCRIPTION: View of pooled oil spread across facility yard.

DATE: 11/13/91

TIME: 0815

DIRECTION OF PHOTOGRAPH: Northwest

WEATHER CONDITIONS: Mostly Sunny Upper 50's

PHOTOGRAPHED BY: M. Jaster

SAMPLE ID (if applicable): NA

DESCRIPTION: View of pooled oil south of the facility boundary. Spill continued to the west via a drainage ditch.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: Sandoval Zinc PAGE 4 OF 10

U.S. EPA ID: N/A TDD: T05-9111-010 PAN: EIL0760DAA

DATE: 11/13/91

TIME: 1150

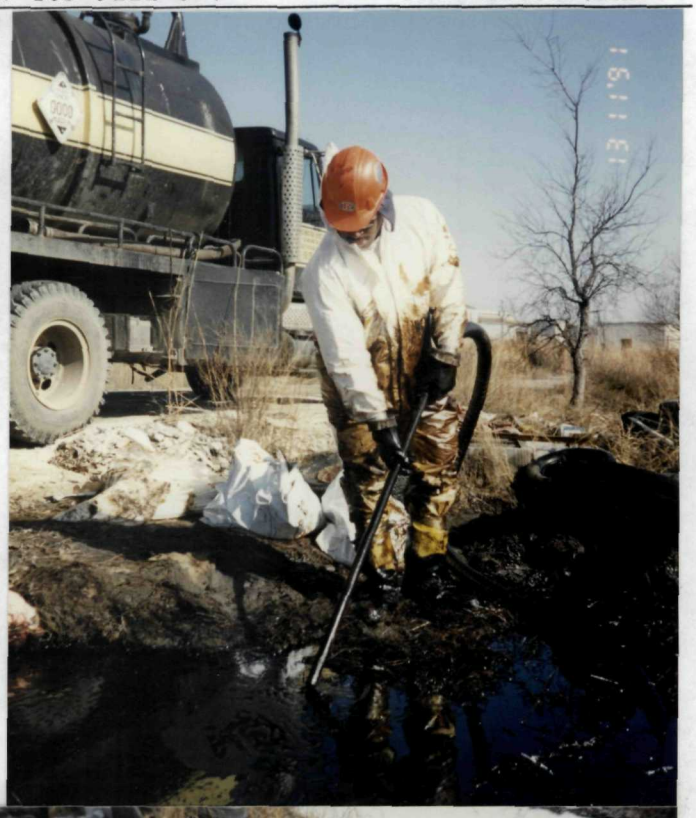
DIRECTION: NE

WEATHER CONDITIONS: Mostly Sunny, 50's

PHOTOGRAPHED BY: M. Jaster

SAMPLE ID (if applicable): NA

DESCRIPTION: Vacuum operations in drainage ditch along site access road. This area is approx. 40 feet from tailend of the spill.



DATE: 11/12/91

TIME: 1000

DIRECTION OF PHOTOGRAPH: Southwest

WEATHER CONDITIONS: Mostly Cloudy Upper 40's

PHOTOGRAPHED BY: M. Jaster

SAMPLE ID (if applicable): NA

DESCRIPTION: View of berm and boom built by IEPA responders. This action prevented the migration of the spill to the nearby Prairie Creek.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: Sandoval Zinc PAGE 5 OF 10

U.S. EPA ID: N/A TDD: T05-9111-010 PAN: EIL0760DAA

DATE: 11/13/91

TIME: 1000

DIRECTION OF PHOTOGRAPH: South

WEATHER CONDITIONS: Mostly Sunny Upper 50's

PHOTOGRAPHED BY: M. Jaster

SAMPLE ID (if applicable): NA

DESCRIPTION: Vacuum operations inside facility yard. Note large pool outside of facility boundary (fenceline).

DATE: 11/13/91

TIME: 1300

DIRECTION OF PHOTOGRAPH: Northwest

WEATHER CONDITIONS: Mostly Sunny Upper 50's

PHOTOGRAPHED BY: M. Jaster

SAMPLE ID (if applicable): NA

DESCRIPTION: Progress view of cleanup activities in culvert area near tailend of spill.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: Sandoval Zinc PAGE 6 OF 10

U.S. EPA ID: N/A TDD: T05-9111-010 PAN: EIL0760DAA

DATE: 11/14/91

TIME: 0815

DIRECTION OF PHOTOGRAPH: Southeast

WEATHER CONDITIONS: Mostly Cloudy Upper 40's

PHOTOGRAPHED BY: M. Jaster

SAMPLE ID (if applicable): NA

DESCRIPTION: View of kiln dust being spread on oil-saturated soils in ditch.

DATE: 11/14/91

TIME: 0830

DIRECTION OF PHOTOGRAPH: South

WEATHER CONDITIONS: Mostly Cloudy Upper 40's

PHOTOGRAPHED BY: M. Jaster

SAMPLE ID (if applicable): NA

DESCRIPTION: View of kiln dust absorbing remaining oil after vac operations.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: Sandoval Zinc PAGE 7 OF 10

U.S. EPA ID: N/A TDD: T05-9111-010 PAN: EIL076ODAA

DATE: 11/14/91

TIME: 1045

DIRECTION OF PHOTOGRAPH: Southeast

WEATHER CONDITIONS: Mostly Cloudy Upper 40's

PHOTOGRAPHED BY: M. Jaster

SAMPLE ID (if applicable): NA

DESCRIPTION: View of oil being flushed towards pump placed in culvert.

DATE: 11/14/91

TIME: 1425

DIRECTION OF PHOTOGRAPH: Southeast

WEATHER CONDITIONS: Mostly Cloudy Upper 40's

PHOTOGRAPHED BY: M. Jaster

SAMPLE ID (if applicable): NA

DESCRIPTION: View of crew preparing building for additional storage of excavated soils.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: Sandoval Zinc PAGE 8 OF 10

U.S. EPA ID: N/A TDD: T05-9111-010 PAN: EIL0760DAA

DATE: 11/15/91

TIME: 0730

DIRECTION OF PHOTOGRAPH: North

WEATHER CONDITIONS: Cloudy,drizzle Upper 50's

PHOTOGRAPHED BY: M. Jaster

SAMPLE ID (if applicable): NA

DESCRIPTION: View of facility yard after oil saturated kiln scraped off.

DATE: 11/15/91

TIME: 0730

DIRECTION OF PHOTOGRAPH: Southeast

WEATHER CONDITIONS: Cloudy,drizzle Upper 50's

PHOTOGRAPHED BY: M. Jaster

SAMPLE ID (if applicable): NA

DESCRIPTION: View of facility yard after oil saturated kiln scraped off.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: Sandoval Zinc PAGE 9 OF 10

U.S. EPA ID: N/A TDD: T05-9111-010 PAN: EIL076ODAA

DATE: 11/15/91

TIME: 0920

DIRECTION OF PHOTOGRAPH: Northwest

WEATHER CONDITIONS: Cloudy,drizzle Upper 50's

PHOTOGRAPHED BY: M. Jaster

SAMPLE ID (if applicable): NA

DESCRIPTION: View of kiln being spread and scraped in facility yard.

DATE: 11/15/91

TIME: 0830

DIRECTION OF PHOTOGRAPH: Northeast

WEATHER CONDITIONS: Cloudy,drizzle Upper 50's

PHOTOGRAPHED BY: M. Jaster

SAMPLE ID (if applicable): NA

DESCRIPTION: View of cleaned ditch after soil/kiln mixture excavation.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: Sandoval Zinc PAGE 10 OF 10

U.S. EPA ID: N/A TDD: T05-9111-010 PAN: EIL0760DAA

DATE: 11/15/91

TIME: 0915

DIRECTION OF PHOTOGRAPH: Southeast

WEATHER CONDITIONS: Cloudy,drizzle Upper 50's

PHOTOGRAPHED BY: M. Jaster

SAMPLE ID (if applicable): NA

DESCRIPTION: View of kiln left on large pool of oil outside facility boundary.

DATE: 11/15/91

TIME: 0745

DIRECTION OF PHOTOGRAPH: Southwest

WEATHER CONDITIONS: Cloudy,drizzle Upper 50's

PHOTOGRAPHED BY: M. Jaster

SAMPLE ID (if applicable): NA

DESCRIPTION: View of scraped SW corner of facility. Booms were left in place to prevent any possible runoff after anticipated rains.